

PATENT COOPERATION TREATY

Rec'd PCT/PTO 07 DEC 2004

10/517141

From the
INTERNATIONAL PRELIMINARY EXAMINING AUTHORITY

To:

OSHIMA, Yoichi
7th Floor,
Kitagawa Bldg.,
42 Kagurazaka 6-chome,
Shinjuku-ku,
Tokyo 162-0825
JAPON

PCT

WRITTEN OPINION (PCT Rule 66)

Applicant's or agent's file reference F910		Date of mailing (day/month/year)	24.08.2004
International application No. PCT/JP 03/09170		International filing date (day/month/year)	18.07.2003
		Priority date (day/month/year)	13.11.2002
International Patent Classification (IPC) or both national classification and IPC H02K3/47			
Applicant HONDA GIKEN KOGYO KABUSHIKI KAISHA et al.			

- This written opinion is the **first** drawn up by this International Preliminary Examining Authority.
- This opinion contains indications relating to the following items:


I	<input checked="" type="checkbox"/>	Basis of the opinion
II	<input type="checkbox"/>	Priority
III	<input type="checkbox"/>	Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
IV	<input type="checkbox"/>	Lack of unity of invention
V	<input checked="" type="checkbox"/>	Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
VI	<input type="checkbox"/>	Certain documents cited
VII	<input type="checkbox"/>	Certain defects in the international application
VIII	<input type="checkbox"/>	Certain observations on the international application
- The applicant is hereby **invited to reply** to this opinion.

When? See the time limit indicated above. The applicant may, before the expiration of that time limit, request this Authority to grant an extension, see Rule 66.2(d).

How? By submitting a written reply, accompanied, where appropriate, by amendments, according to Rule 66.3. For the form and the language of the amendments, see Rules 66.8 and 66.9.

Also: For an additional opportunity to submit amendments, see Rule 66.4.
For the examiner's obligation to consider amendments and/or arguments, see Rule 66.4 bis.
For an informal communication with the examiner, see Rule 66.6.

If no reply is filed, the international preliminary examination report will be established on the basis of this opinion.
- The final date by which the international preliminary examination report must be established according to Rule 69.2 is: 13.03.2005

Name and mailing address of the international preliminary examining authority:	Authorized Officer
 European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465	von Rauch, E Formalities officer (incl. extension of time limits) Garvey, R Telephone No. +49 89 2399-2271



I. Basis of the opinion

1. With regard to the **elements** of the international application (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this opinion as "originally filed"*):

Description, Pages

1-17 as originally filed

Claims, Numbers

1-9 as originally filed

Drawings, Sheets

1/17-17/17 as originally filed

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).
☐ the language of publication of the international application (under Rule 48.3(b)).
☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
☐ filed together with the international application in computer readable form.
☐ furnished subsequently to this Authority in written form.
☐ furnished subsequently to this Authority in computer readable form.
☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

- ☐ the description, pages:
☐ the claims, Nos.:
☐ the drawings, sheets:

5. ☐ This opinion has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)).

6. Additional observations, if necessary:

V. Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**1. Statement**

Novelty (N)	Claims	1,2,3,4,5
Inventive step (IS)	Claims	6-9
Industrial applicability (IA)	Claims	

2. Citations and explanations**see separate sheet**

Re Item V

Reasoned statement with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

- 1) Reference is made to the following documents:

D1: EP-A-1 073 179 (HONDA MOTOR CO LTD) 31 January 2001 (2001-01-31)

D2: FR-A-2 411 788 (VIDEON SA) 13 July 1979 (1979-07-13)

- 2.1) The present application does not meet the criteria of Article 33(1) PCT, because the subject-matter of claim 1 is not new in the sense of Article 33(2) PCT.

Document D1 discloses (the references in parentheses applying to this document):
A slotless permanent magnet electric machine, comprising a cylindrical rotor (7) having a permanent magnet (11), a stator (1) surrounding the rotor (7) wherein the stator (1) consists of a slotless winding (15) inside an iron core (17) and an air gap, the stator winding (15) comprises a plurality of overlapping turns of a conductor (23, 29) which are shifted in circumferential direction and wherein the conductor (23, 29) has an rectangular cross section, including a long an a short side, with the long side extending in radial direction (cf. figures 5-6).

- 2.2) The present application does not meet the criteria of Article 33(1) PCT, because the subject-matter of claim 5 does not involve an inventive step in the sense of Article 33(3) PCT.

Document D2 is regarded as being the closest prior art to the subject-matter of claim 5, and discloses (the references in parentheses applying to this document):

A method of making a winding including steps of:

- wrapping a first round wire (3) having a diameter of the short side of the conductor and a second round wire in a spiral around a tool, whereby alternating the first and the second wire and having a contact between the two wires (cf. figure 1),
- removing the first wire from the tool,
- wrapping the conductor around the bar inside the space created by removing the first wire,
- removing the second wire from the tool.

The subject-matter of claim 5 therefore differs from this known document D in the assembly of a winding for a slotless permanent magnet electric machine, whereby the winding conductors have a rectangular cross-section, being wound with the conductor long side perpendicularly towards the surface of the tool, and a bar as winding tool.

The problem to be solved by the present invention may therefore be regarded as how to create a slotless winding

The solution proposed in claim 5 of the present application cannot be considered as involving an inventive step (Article 33(3) PCT) for document D1 discloses a slotless permanent magnet electric machine, comprising a rectangular conductor with the long side perpendicular to a winding tool. A skilled person would use the winding tool and method as disclosed in document D2 to produce an electric machine disclosed in document D1.

- 3) Dependent claims 2-4,6-9 do not contain any features which, in combination with the features of any claim to which they refer, meet the requirements of the PCT in respect of novelty and/or inventive step, see documents D1 and D2.

- 4) Some of the features in the method claims 6 and 7 relate to an apparatus rather than adding steps to the method of claim 5. The intended limitations are therefore not clear from this claim, contrary to the requirements of Article 6 PCT. A dependency of claims 6 and 7 on apparatus claim 1, would overcome this objection.

The term "elongated" used in claim 1 is vague and unclear and leaves the reader in doubt as to the meaning of the technical feature to which it refers, thereby rendering the definition of the subject-matter of said claim unclear, Article 6 PCT. The definition in claim 5 of a conductor having rectangular cross-section including a long and a short side seems to be more appropriate.